IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	SKOOG et al.	:	
		:	
Serial No.	10/726,361	:	Group Art Unit 1762
		:	
Application Filed	December 3, 2003	:	Examiner: Turocy, David P.

For: SPRAYABLE NOBLE METAL COATING FOR HIGH TEMPERATURE USE DIRECTLY ON AIRCRAFT ENGINE ALLOYS

DECLARATION UNDER 37 CFR § 1.132

Andrew J. Skoog, hereby certifies the following:

1. I am a joint inventor of all the claims of the patent application identified above and I am a joint inventor of the subject matter described and claimed therein.

2. I have extensive knowledge of the compositions of superalloy and titanium materials and coatings applied over the substrates of superalloy and titanium materials, including reflective coatings.

3. I have observed differences in durability of a reflective coating applied over a substrate of superalloy and titanium materials when the reflective coating is applied by methods consisting of air-assisted spraying, airless spraying, brushing and decal transfer, when compared to other application methods. These differences in durability include enhanced inhibition of the reflective coating to erosion, corrosion and diffusion into the substrate of superalloy and titanium materials.

4. I have observed differences both in the duration and the magnitude of temperature that can be withstood by a reflective coating applied over a substrate of superalloy and titanium materials when the reflective coating is applied at ambient temperature and pressure conditions by methods consisting of air-assisted spraying, airless spraying, brushing and decal transfer, when compared to other application methods. These differences include the reflective coating having the capability not only to withstand higher temperatures, but also to withstand those higher temperatures for durations exceeding that of reflective coatings applied by different methods.

5. I have observed the ability of a reflective coating applied over a titanium material at ambient temperature and pressure conditions by methods consisting of air-assisted spraying, airless spraying, brushing and decal transfer to then successfully pass certain test procedures used to measure for stress corrosion cracking in the titanium material.

6. I have not observed the ability of a reflective coating applied over a titanium material by methods other than air-assisted spraying, airless spraying, brushing and decal transfer to then successfully pass the test procedures used to measure for stress corrosion cracking in the titanium material that were alluded to in item 5.

7. Included with this Declaration are Figures 1-6, based on testing conducted in November 2006. These figures relate to testing various combinations of superalloys and titanium alloys having a reflective coating mixture applied by air-assisted spraying and then subjected to a 1,400°F environment for one hour. Each of Figures 1-6 show the hemispherical reflectance properties for reflectance angles of 10, 30, 50 and 70 degrees on the coated coupon. Figures 1 and 2 relate to coupons composed of cobalt-base superalloy HS188 over which is applied a respective reflective coating mixture of gold 991BD (Figure 1) and platinum APP100A (Figure 2), which reflective coating mixtures are further disclosed in the present application as originally filed. Figures 3 and 4 relate to coupons composed of nickel-base superalloys Rene 41® (Figure 3) and Inconel 625 (Figure 4) over which is applied a reflective coating mixture of platinum APP100A. Figures 5 and 6 relate to coupons composed of titanium alloys Ti64 (Figure 5) and Ti6242 (Figure 6) over which is applied a reflective coating mixture of platinum APP100A. In contrast, Figure 11, which was filed in the present application and was exposed to a 1,600°F environment for 50 hours, retained a significantly improved hemispherical reflectance over all angles. This is shown at 50 degrees in the filed application.

8. Since airless spraying, brushing and decal transfer are also applied at ambient temperature and pressure conditions, the unexpected results associated with air-assisted spraying identified in item 7 also apply for airless spraying, brushing and decal transfer.

9. It is my belief, based on at least these observations, including test results as shown in Figures 1-6, that application of a reflective coating over superalloy or titanium materials at ambient temperature and pressure conditions by methods consisting of air-assisted spraying, airless spraying, brushing and decal transfer, cannot be considered to be a "conventional" method of application, when compared to other previously used application methods.

10. I hereby acknowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon, and I hereby declare that all statements made in this declaration of my own knowledge are true and that all statements made on information and belief are believed to be true.

Andrew J. Skoog 4/18/07

Andrew J. Skoog

HS188 w/ GOLD 991BD

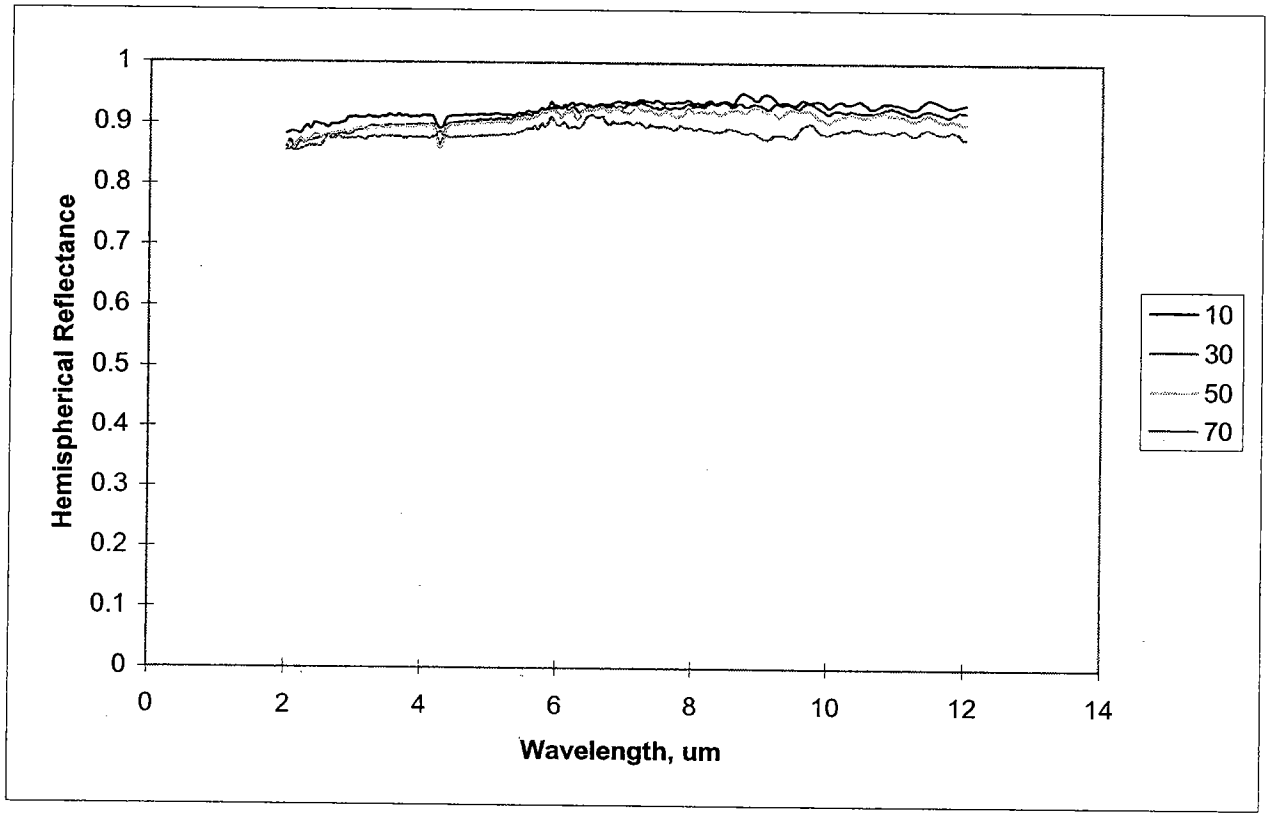

FIGURE 1

HS188 w/ PLATINUM APP100A

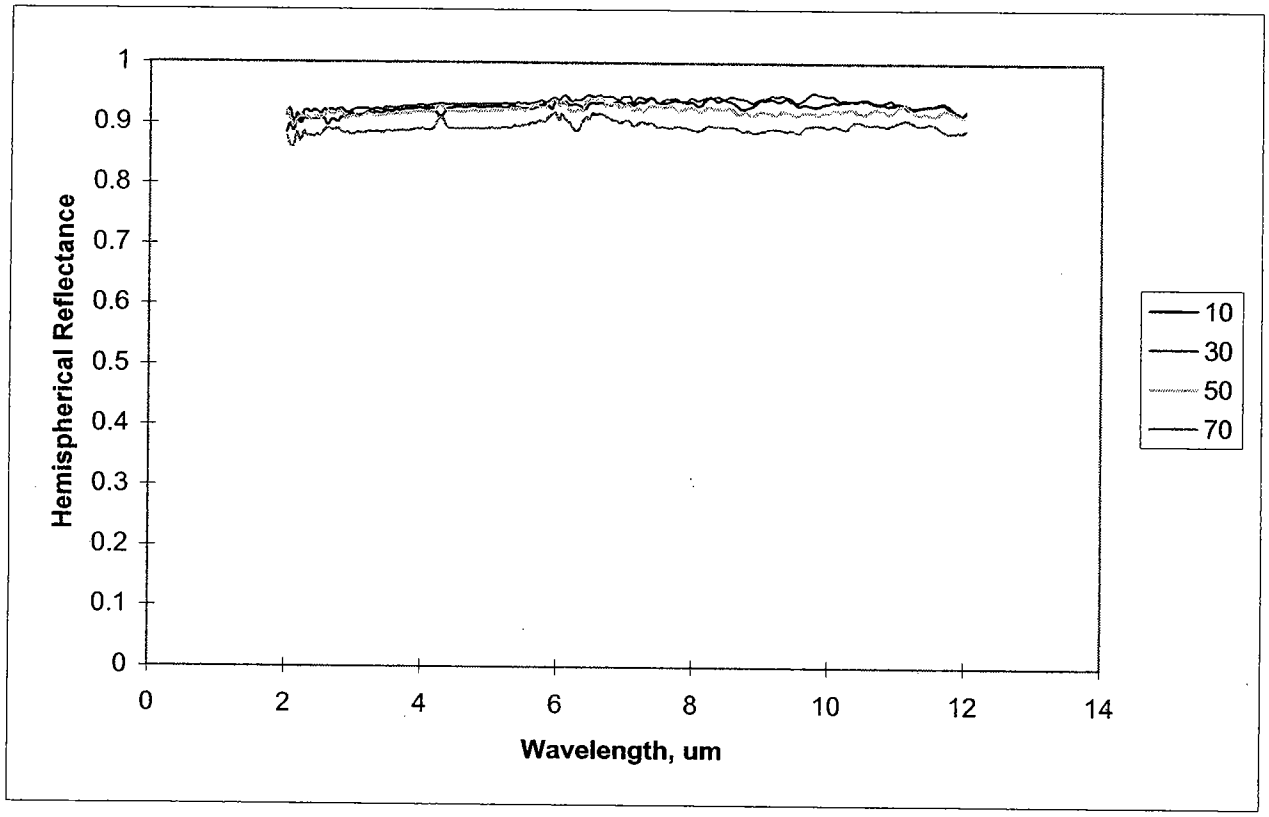

FIGURE 2

RENE 41 w/ PLATINUM APPIOOA

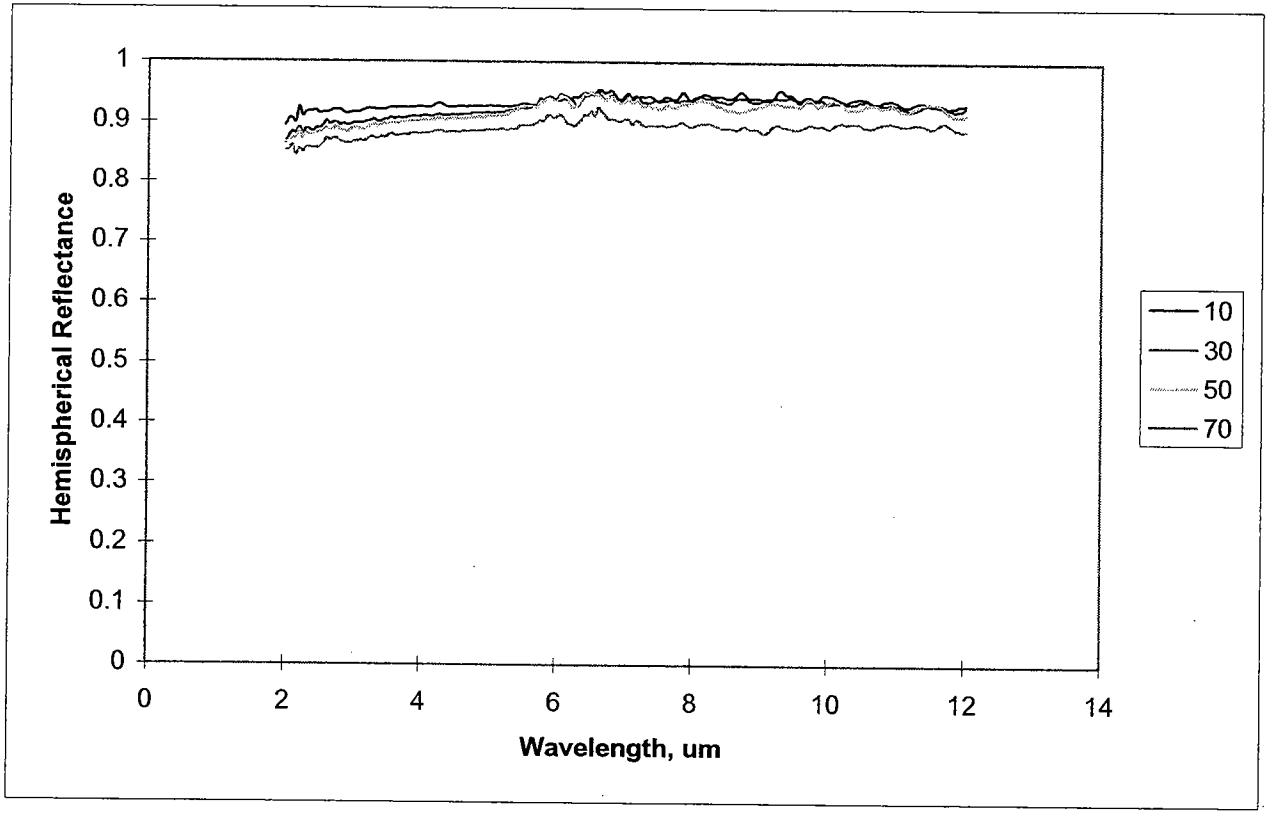

FIGURE 3

INCONEL 625 w/ PLATINUM APP100A

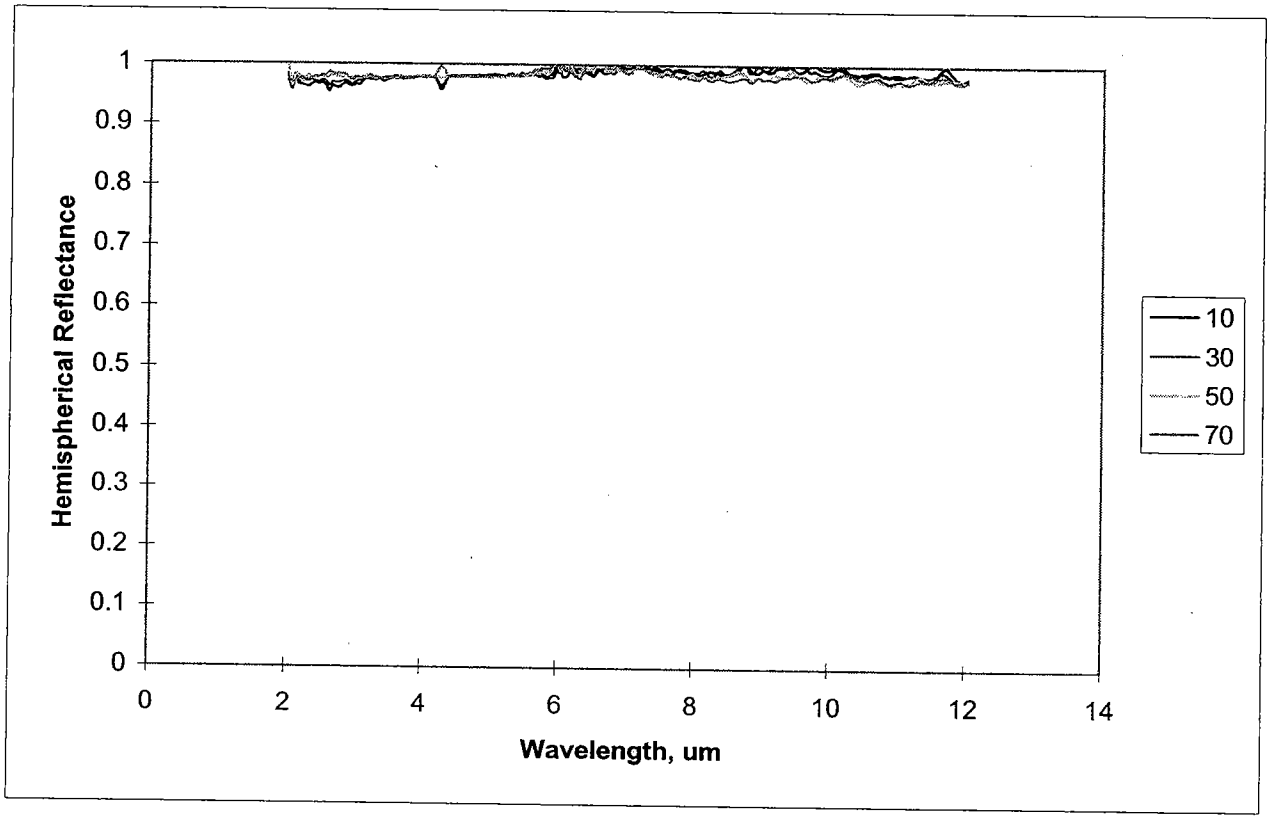

FIGURE 4

Ti 64 w/ PLATINUM APP100A

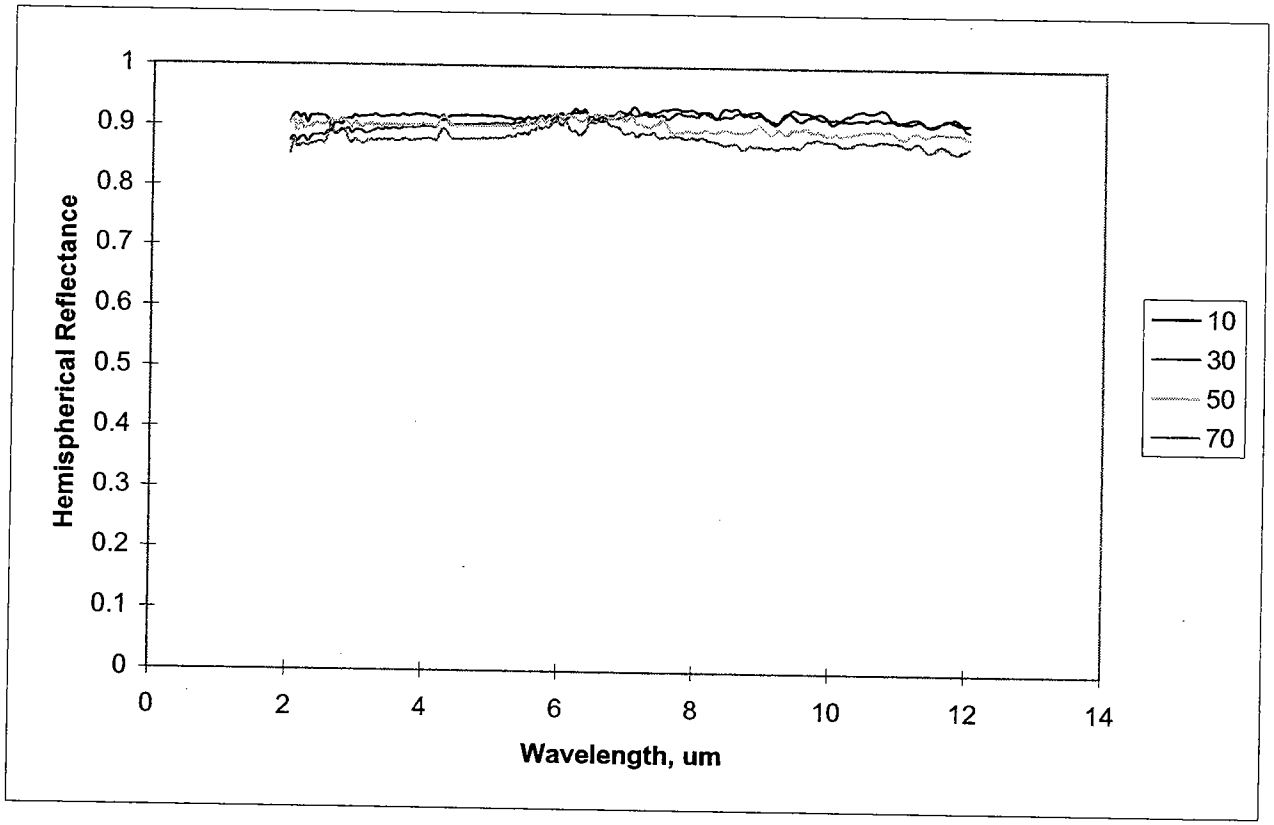

FIGURE 5

Ti 6Z42 w/ PLATINUM APP100A

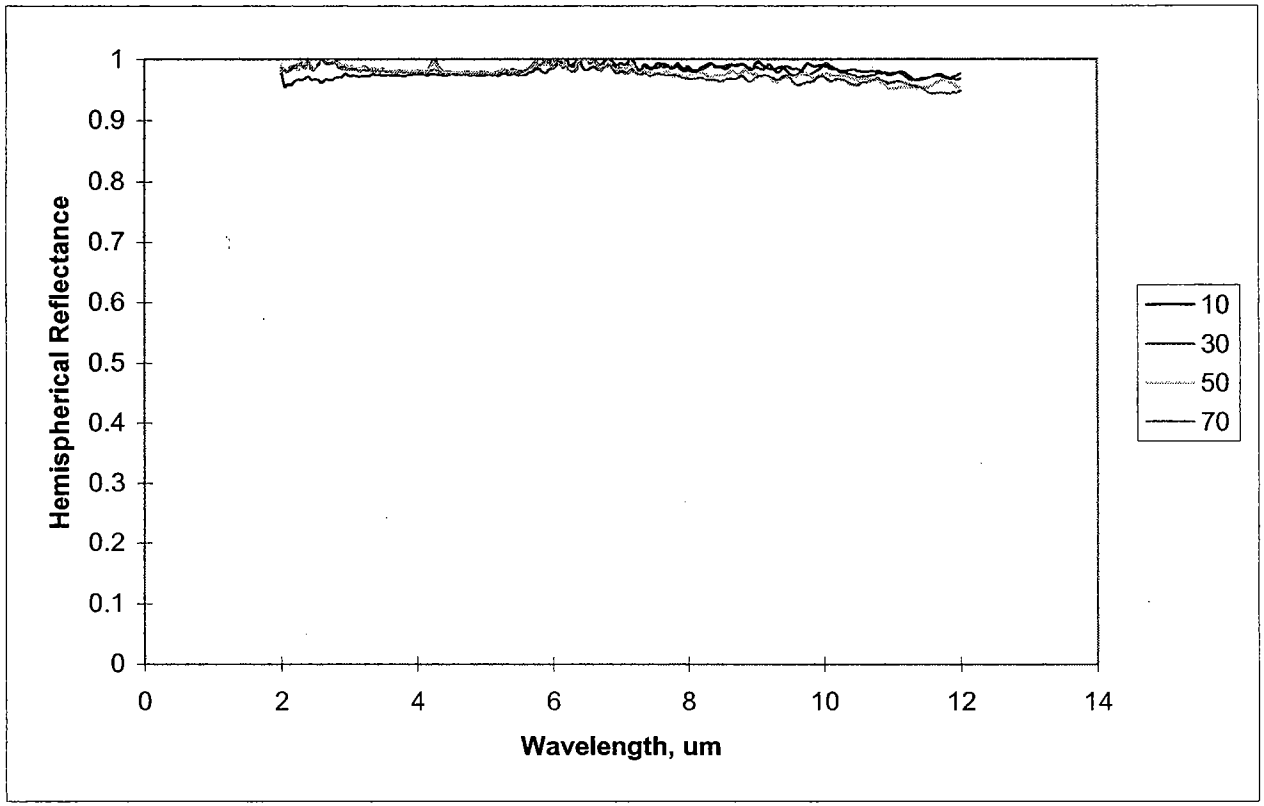

FIGURE 6